

Supporting Information

Facile Synthesis of MXenes-Ti₃C₂/Co Nanosheets-Hydrogel Sen-Sor with the Assistance of Smartphone for On-Site Monitoring of Glucose in Beverages

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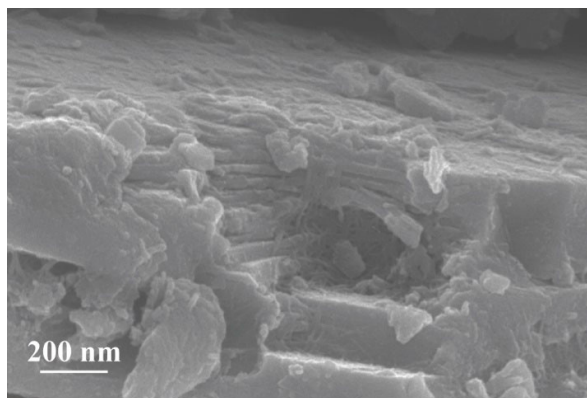


Figure S1. SEM image of Ti₃AlC₂ before CoCl₂ etching.

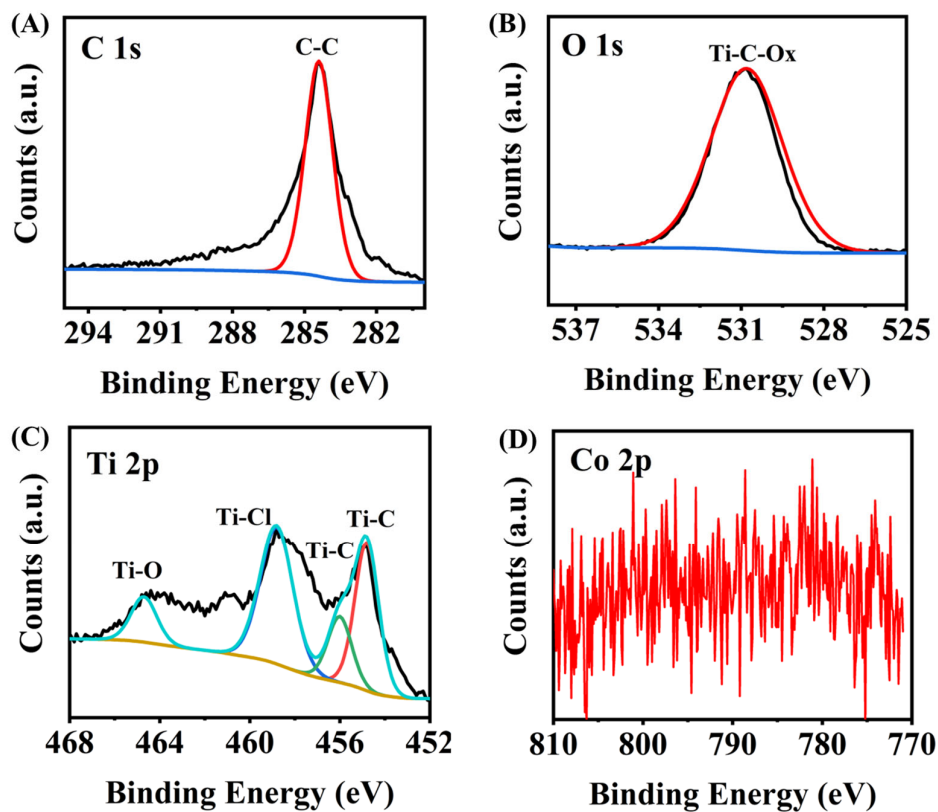


Figure S2. The XPS spectrum of MXenes-Ti₃C₂/Co NS: (A) C 1s, (B) O 1s, (C) Ti 2p, (D) Co 2p.

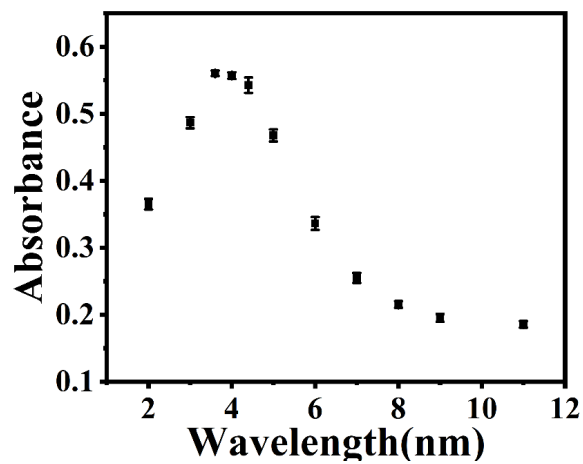


Figure S3. The influence of pH on the catalytic performance of MXene-Ti₃C₂/Co NSs.

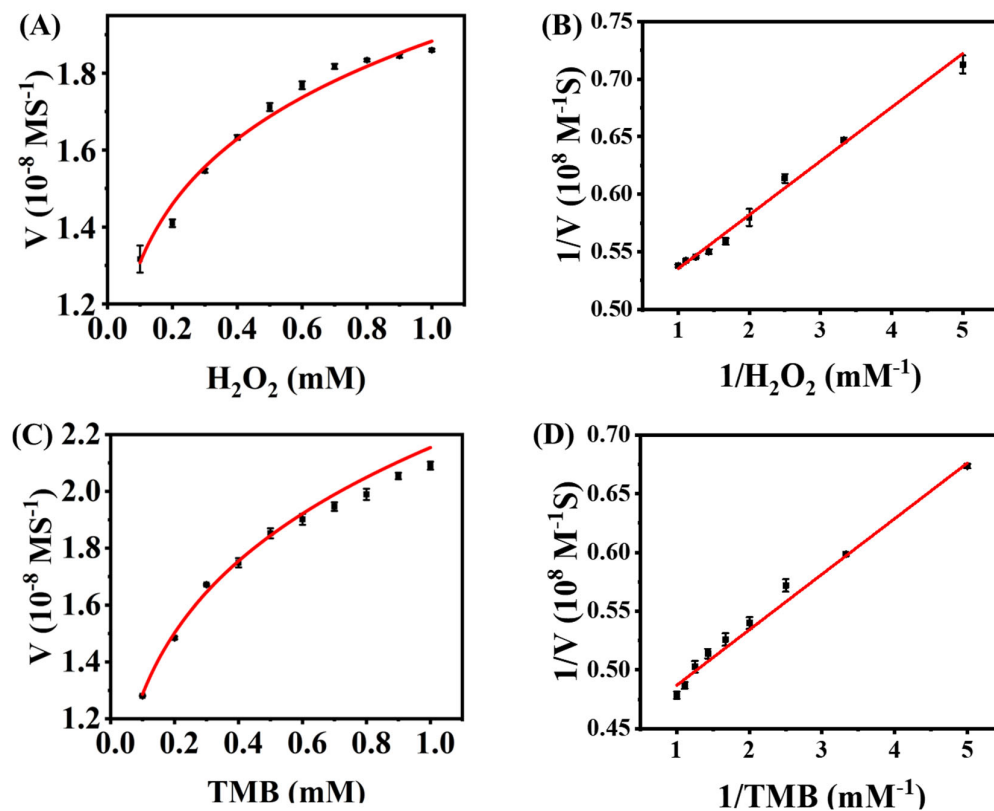


Figure S4. Steady-state kinetic curves with the Michaelis-Menten equation (A, C) and the corresponding double-reciprocal plots with the Lineweaver-Burk method (B, D) for the MXene-Ti₃C₂/Co nanocomposites. (A, B) Concentration of TMB is fixed at 1.0 mM, whereas that of H₂O₂ varies; (C, D) concentration of H₂O₂ is 1 mM, whereas the TMB concentration changes.

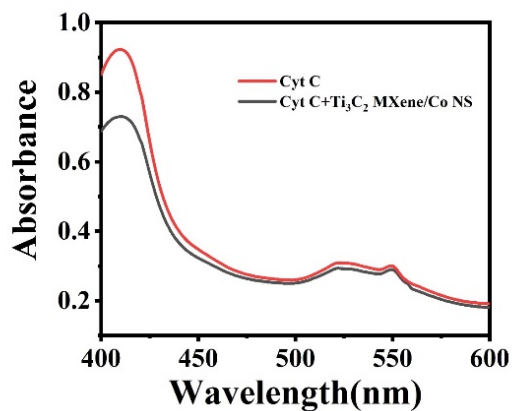


Figure S5. UV-vis spectra of Cyt C before and after interacting with Cu NCs/Ti₃C₂ NSs.

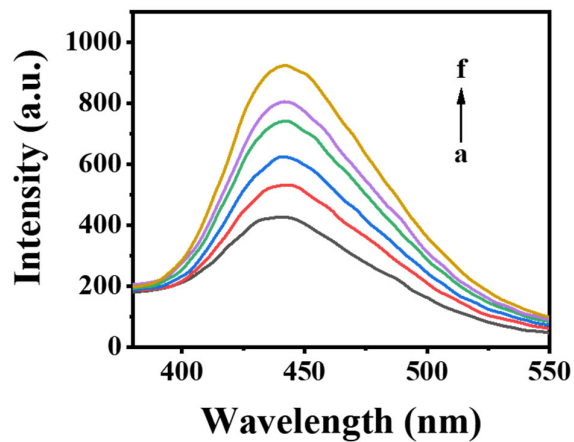


Figure S6. Fluorescence spectra for interaction among TA+H₂O₂ and MXene-Ti₃C₂/Co nanosheets with different concentration.

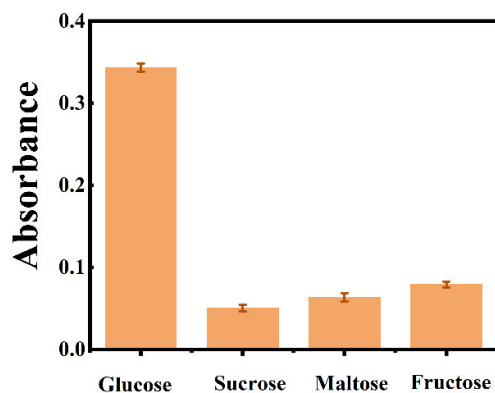


Figure S7. Selectivity for glucose.

Table S1. Comparison of different colorimetric methods for glucose detection.

Sensor	Linear Range (μM)	LOD (μM)	Reference
MnO ₂ -nanosheet-modified upconversion nanoparticles	0-250	3.7	[38]
Copper nanoclusters	100-2000	100	[39]
Carbon quantum dots	20-600	2.18	[40]
CuZnFeS nanocrystals	16-60	4.1	[41]
5,10,15,20-tetrakis (4-carboxyl phenyl)-porphyrin functionalized NiO nanoparticles	50-500	20	[42]
MXene-Ti ₃ C ₂ /Co NSs	5-100	1.7	This work